



ELECTRICAL CURRENTS

Newsletter from the Office of the Chief Electrical Inspector

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● Perfect Exam Scores

Since LaserGrade has been delivering the new Washington electrician examinations in a computer-based format, there have been five individuals that scored 100% on their journeyman or specialty electrician examination. These individuals deserve the respect of their peers in the electrical industry. We would like to acknowledge this achievement by printing their names in this newsletter for all of our stakeholders to see. If you know these individuals, please give them your congratulations.

07-Nonresidential Maintenance	2/24/2002	Robert Jennings , Roy, WA
7B-Residential Maintenance	5/20/2002	Kris Goelzenleuchter , Centralia WA
6A-HVAC/refrigeration	6/20/2002	Duane Tufte , Federal Way, WA
01-Journeyman Electrician	9/28/2002	Trevor Hewitt , Ferndale, WA
7B-Residential Maintenance	5/5/2003	Nathaniel Rinker , Kelso, WA

● Avoid Costly Corrections—Make Sure Your Code Books (2002 NEC) Are Accurate

Our inspectors recently encountered an installation where the contractor used nonmetallic-sheathed cable (Type NM) on 120/240-volt, 3-wire, single-phase, dwelling unit feeders at the increased ampacity that is detailed in NEC 310.15(B)(6). In the first printing of the 2002 NEC in Table 310.15(B)(6) this may seem to be an acceptable installation, however, a correction was properly written and posted. The permission to use this higher ampacity rating only applies to conductor types RHH, RHW, RHW-2, THHN, THHW, THW, THW-2, THWN, THWN-2, XHHW, XHHW-2, SE, USE, and USE-2. (NEC 334.80 places additional restrictions on the ampacity of conductors in NM cables as well.)

In a document as complex as the NEC nearly every printing has errata associated with the final production run. The National Fire Protection Association (NFPA) added the above conductor limitations to the heading of Table 310.15(B)(6) as part of **43 corrections** (errata) made to the first printing of the 2002 NEC. Subsequent errata have been issued for the 2002 NEC second printing and the 2002 NEC Handbook. The details of the errata are available to the public at: www.nfpa.org/Codes/tias_errata.asp.

This web page also includes all Temporary Interim Amendments (TIA's) that are effective between different editions of the standard. When you search their Web site, remember that the official NFPA document title for the National Electrical Code is **NFPA 70**.

● Electrical Compliance Activity—Revocation Of Administrator Certification

The owner of an electrical contracting firm recently had his (01) journeyman and (01) general administrator certificates revoked and fines and court costs collected for misrepresenting his prior electrical training. The falsified information allowed the business owner to illegally obtain (01) journeyman electrician certification. A department audit revealed his contracting firm was licensed only as a residential specialty electrical contractor and thus excluded from commercial/industrial installations. In addition, the firm did not employ any certified journeyman electricians to provide the required supervision for the claimed training experience.

The department sought revocation of the owner's administrator certificate, in addition to the illegally obtained journeyman certificate, because the administrator assigned to an electrical contracting firm is the responsible party to ensure all code and technical standards and state laws and rules are followed. The electrical administrator (or master electrician) is held accountable to the highest standards of the electrical industry. If you have assumed administrative responsibility for an electrical firm do not take it lightly.

● Expedited Plan Review?

In order ensure that all plan submittals are processed in a fair, equitable manner, plans are assigned to the examiners in the order that they are received. The department has no process to “expedite” plans that are not submitted prior to the scheduled construction start with enough lead-time to ensure they are “...reviewed and approved before the electrical installation or alteration is started.” as required in WAC 296-46B-010(16).

Even when a submitter is willing to pay for overtime in addition to review fees the department, unlike most businesses, does not have the ability to accept additional fees and translate them directly into employee overtime wages. Our mandatory budget process is different than a typical business. You cannot “buy” your way out of poor planning by the electrical designer and/or facilities owner. Failure to allocate time for the review process may result in construction delays.

● Independent Power Producers

Electrical utilities are beginning programs to purchase electrical power from independent power producers (IPP). Two popular alternate sources of electricity are solar photovoltaic systems and wind generation.

RCW 19.28.091(2)(c) and WAC 296-46B-925(18) allow independent power producers exemption when they meet specific criteria. Each IPP must make application to the Chief Electrical Inspector, **prior to beginning the project**, to be recognized as an IPP exempted from the requirements of the RCW 19.28 and WAC 296-46B. Failure to do so may result in non-compliance citations and civil penalties.

Installation of alternate power sources constructed for standby or supplemental onsite use by a utility customer must comply with all requirements set forth in RCW 19.28 and WAC 296-46B for permitting, inspections, licensing, and worker certification.

● Low Voltage and Telecommunications Cabling

It has recently come to the department’s attention that installers of low voltage and telecommunications system wiring are securing cables using staples that are causing damage to the cables. Performance of certain cables can be compromised by improper installation methods even when damage is not visible.

NEC 110.3(B) requires: “*Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling*”. The definition of “electrical equipment” found in WAC 296-46B-020(19) includes electrical conductors. Cables must be secured according to the manufacturer’s instructions.

WAC 296-46B-300 references Chapter 3 of the NEC for securing telecommunications, power limited, and NEC Class 2 and 3 cables. It also requires that cables “*must be secured in a manner that will not cause damage to the cables*” and allows telecommunications and optical fiber cables to be secured at intervals not to exceed five feet.

In Chapters 7 and 8 of the National Electrical Code repeats a common theme, “*Such cables shall be attached to structural components by straps, staples, hangers, or similar fittings designed and installed so as not to damage the cable. The installation shall also conform with 300.4(D).*”

● Electrical Question of the Month

This Month’s Question: Disconnecting means, in other than dwelling units, require an identification plate identifying the purpose of the disconnect and the _____ of the circuit source panelboard that supplies the disconnect. A) Voltage, B) Amperage, C) identification designator, D) temperature limitations

Last Month’s Question: When the opening to an outlet, junction, or switch point is less than 8 inches in any dimension, each conductor shall be long enough to extend at least _____ outside the opening of the enclosure. A) 3 inches, B) 4 inches, C) 6 inches, D) 8 inches. The answer is: A) [NEC 300.14]